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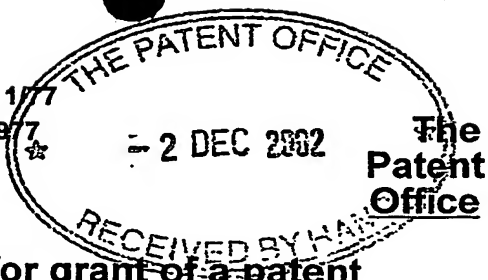
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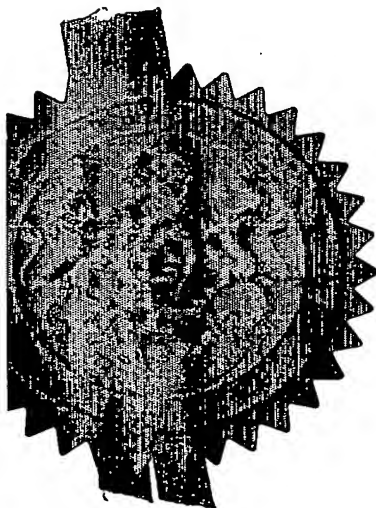
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03DEC02 E767938-2 002917
P01/7700 0.00-0228072.5

| 1. | Your reference |
| | 5434302/AM |

| 2. | Patent Application Number |

0228072.5   0 2 DEC 2002

| 3. | Full name, address and postcode of the or or each applicant *(underline all surnames)* |

Thirdspace Living Limited
1st Floor
Alcatel Building
Voyager Place
Shoppenhangers Road
Maidenhead
Berkshire SL6 2PJ

Patents ADP number *(if known)* - 8119133 002

If the applicant is a corporate body, give the
country/state of its incorporation

Country: ENGLAND
State:

| 4. | Title of the invention |

GAMES CONSOLE ADAPTOR UNIT

| 5. | Name of agent | Beresford & Co |

"Address for Service" in the United Kingdom
to which all correspondence should be sent

2/5 Warwick Court
High Holborn
London WC1R 5DH

Patents ADP number   1826 001

| 6. | Priority details |

| Country | Priority application number | Date of filing |
| GB | 0212567.2 | 30 MAY 2002 |

7. If this application is divided or otherwise derived from an earlier UK application give details

Number of earlier application   Date of filing

8. Is a statement of inventorship and or right to grant of a patent required in support of this request?

YES

9. Enter the number of sheets for any of the following items you are filing with this form.

Continuation sheets of this form

Description   **19**

Claim(s)   **18**
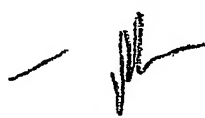
Abstract   **1**

Drawing(s)   **3** +3

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Priority documents

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Statement of inventorship and
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Request for preliminary examination
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11. I/We request the grant of a patent on the basis of this application

Signature _____*Beresford & Co*_____   Date   2 December 2002
BERESFORD & Co

12. Name and daytime telephone number of   ALAN JOHN SHAW MACDOUGALL
person to contact in the United Kingdom
Tel: 020 7831 2290

GAMES CONSOLE ADAPTOR UNIT

The present invention relates to an adaptor unit for use with a games console. The invention has particular,

5   although not exclusive relevance to an adaptor unit which connects to the games console and which increases the functionality of the games console.

Various games consoles have been proposed which connect

10   to a television set and which allow users to play game products which can be bought for the console. Examples of this type of games console include the Sony Playstation, the Nintendo Game Cube or Microsoft's Xbox.

15   One aim of the present invention is to provide an adaptor unit for a games console which includes television signal receiving circuitry and which allows the games console to function as an interactive television receiver.

20   In one embodiment, an adaptor is provided for a games console which allows users to gain access to interactive television services through the games console. The adaptor includes a television tuner for receiving broadcast television channels, a communications

25   controller which controls communications between the

adaptor and the games console and an interface for interfacing the adaptor to the games console. In a preferred embodiment, the adaptor also includes a hard disc for storing video data and for storing game history data. The adaptor may also include a modem via which the user can gain access to remote servers connected to a data network.

An exemplary embodiment of the invention will now be described with reference to the following drawings in which:

Figure 1 is a schematic diagram illustrating an interactive television system;

Figure 2 is a block diagram illustrating the main components of an adaptor unit and a games console forming part of the system shown in Figure 1;

Figure 3 is a block diagram illustrating the main components of a video player forming part of the games console shown in Figure 2; and

Figure 4 is a block diagram illustrating the main functional components of a web browser forming part of

the games console shown in Figure 2.

Overview

Figure 1 is a schematic diagram illustrating an interactive television system. As shown in Figure 1, the system includes, a number of user stations, two of which are shown and labelled 1-1 and 1-2. Each user station 1 includes an adaptor unit (AU) 3, which is connected to a television (TV) 5 through a games console (GC) 7. Each user station 1 also includes a personal computer (PC) 9 which is also connected to the adaptor unit 3. The adaptor unit 3 is arranged to receive broadcast video data from a broadcast media server transmitter 11 or from an overhead satellite 13 via an aerial 15 on the user station 1. The adaptor unit 3 can also receive video data from a media server 17 through a data network 19. In this embodiment, the games console 7 can also be connected to a remote game server 21 via the adaptor unit 3 and the data network 19. This allows the downloading of games and the like from the games server 21 to the games console 7 for play out with the user.

Adaptor Unit and Games Console

Figure 2 is a block diagram illustrating in more detail the main components of the adaptor unit 3 and the games

console 7. As shown, the adaptor unit 3 includes a television tuner 31 for receiving video signals from the overhead satellite 13 or the broadcast transmitter 11 via the television aerial 15. The adaptor unit 3 also

5   includes an ADSL modem 33 for connecting the adaptor unit 3 to the data network 19 so that the adaptor unit 3 can receive video data from the remote media server 17. The ADSL modem 33 can also transmit messages received from a user via a remote control 35 and a remote control

10   interface 37, back to the remote media server 17. These user requests may be requests to download or stream a specific video file or to control the streaming of an existing file being received. The adaptor unit 3 also includes a hard disk 39 into which received video files

15   can be recorded for subsequent play out to the user on the television 5. The provision of a hard disk 39 in the adaptor unit 3 facilitates the provision of a personal video recorder (PVR) system in which the user can, for example, pause live television as it is being received,

20   for subsequent play out from the hard disk 19. In this embodiment, this control of the received video stream is performed by the user via the remote control 35 and the remote control interface 37.

25   In this embodiment, the video data received by the

television tuner 31 and the ADSL modem 33 is encoded MPEG video data that is encrypted using the 3DES encryption technique. The decryption key 41 (labelled Key 1) necessary for decrypting the received video streams is

5   provided on a smart-card 43 which is read into the adaptor unit 3 via a smart-card reader 45. A central processing unit (CPU) 47 runs a decryption module 49 stored in a memory 51 using the decryption key 41 to decrypt the received video data. The adaptor unit CPU

10   47 then re-encrypts the decrypted video data using an encryption module 53 stored in the memory 51 together with an encryption key 53 (labelled Key 2) stored on the smart-card 43. In this embodiment, the encryption module re-encrypts the decrypted video data using an AES

15   encryption technique.

The re-encrypted video data is then passed to a games console communications controller 56 which outputs the encrypted video data to the games console 7 via a games

20   console interface 57 (such as a USB port, an ethernet port, Firewire port etc.) and a connector 59. The encrypted video data is received at an adaptor unit interface 61 (such as a USB port, an ethernet port, Firewire port etc.) of the games console 7 and passed

25   into the games console memory 63 where it is decrypted

and decoded by a video player module 65 under control of the games console central processing unit 67. In order that the video player 65 can decrypt the received encrypted video data, it must have the decryption key

5 corresponding to the encryption key 53. In this embodiment, this decryption key is stored in the smart-card 43 and is labelled Key 3 and referenced 54. Further, in this embodiment, it is not possible to decrypt the encrypted video data using only the

10 decryption key 54. Instead, the decryption key 54 must be combined with a secret 73 which is embedded within the compiled version of the video player 65, to generate the code words necessary to decrypt the video data. Since only the video player module 65 knows the secret 73, it

15 is only the video player 65 which can perform the decryption. Consequently, even though the personal computer 9 may have access to the decryption key 54 and to the encrypted video data via the connector 59, it cannot decrypt the video data to regenerate the decrypted

20 video frames.

Video Player

Figure 3 shows in more detail the functional components of the video player module 65. As shown, the video

25 player module 65 includes a decryption key requesting

unit 81 which operates, upon the initial receipt of encrypted video data from the adaptor unit 3, to transmit a request via the adaptor unit interface 61, the connector 59 and the games console interface 57, to the

5   adaptor unit 3 for the appropriate decryption key 54 for decrypting the received video data. This request is dealt with by the games console communications controller 71 within the adaptor unit memory 51, which retrieves the appropriate decryption key 54 from the smart-card 43 via

10   the smart-card reader 45. The games console communications controller 71 then transmits the decryption key 54 back to the decryption key requesting unit 81 via the games console interface 57, the connector 59 and the adaptor unit interface 61. The decryption key

15   requesting unit 81 then passes the received decryption key 54 to a code word generator 83 which combines the received decryption key 54 with the secret 73, to generate the code words which can be used to decrypt the encrypted received video data. As shown in Figure 3, the

20   code words generated by the code word generator 83 are then passed to a decryption engine 85 which uses them to decrypt the encrypted video data received from the adaptor unit 3. The decrypted video data is then passed to an MPEG decoder 87 which decodes the MPEG video data

25   to generate the decoded video data.

Web Browser

In this embodiment, the decoded video data generated by the video player module 65 is output to a web browser module 89 running in the games console memory 63. In this embodiment, it is the web browser module 89 which generates the appropriate television frames which are output to the television 5 via a television interface 91. In particular, the web browser 89 is used to combine the video frames generated by the video player module 73 with menu frames providing the user with different menu options relating to the interactive television system.

Figure 4 is a block diagram illustrating the main functional components of the web browser module 89. As shown, in this embodiment, the web browser module 89 includes an HTML receiver 92 which operates to receive HTML web pages from the remote media server 17 via the data network 19 and the adaptor unit 3. The HTML receiver 92 then passes the received HTML pages to an HTML interpreter 94 which processes the HTML file to generate the appropriate menu page for output to the television interface 91. In this embodiment, for some of the menu pages, video data will be displayed in a video window within the menu page. For these menu pages, the HTML interpreter 94 requests the appropriate video

data from the video player module 65. The received video

data is then combined with the menu page video data and

output to the TV interface 91 for display to the user on

the television 5. In this embodiment, the menu pages

5   provide the user with different options such as the

accessing of an electronic programme guide, the accessing

of email, web services, video-on-demand etc. The user

can then use the remote control 35 to browse through the

menu pages and/or to select items from the menu pages.

10

In this embodiment, the HTML menu pages received from the

remote media server 17 include instructions for the web

browser module 89 which associate key presses on the

remote control 35 to the links for the other menu pages

15   and/or the television services selected by the user. In

this embodiment, the HTML interpreter 94 passes these

instructions to a response generator 96. Subsequently,

when a user presses a key on the remote control 35, the

remote control interface 37 passes data identifying the

20   key-press to the communications controller 71, which in

turn passes the data to the web browser module 89 via the

games console interface 57, the connector 59 and the

adaptor unit interface 61. The key-press data is then

passed to the response generator 96 which interprets the

25   key-press based on the instructions associated with the

current menu page being displayed. In this embodiment, these instructions associated with the menu page are Javascript instructions and the response generator 96 includes an appropriate Javascript command processor (not shown) for interpreting the instruction. The response generator 96 then takes the appropriate action based on the user's input, such as transmitting a request back to the remote media server 17, via the adaptor unit 3 and the data network 19, requesting a new video stream.

In this embodiment, the web browser module 89 and the video player module 65 are both generated by the adaptor unit 3 and downloaded, in compiled format, into the games console memory 63. In particular, in this embodiment, both the web browser module 89 and the video player module 65 are stored in uncompiled form within the hard disc 39 of the adaptor unit 3. These programs can then be updated from time to time by downloading new programs via the ADSL modem 33. The uncompiled programs are then compiled by a compiler module 98 run in the adaptor unit memory 51. During the compilation of the video player module 65, the compiler 98 inserts an appropriate secret 73 so that the video player 65 can decrypt the video data. In this embodiment, the compiled versions of the web browser module 89 and the video player module 65 are

downloaded into the games console memory 63 during a set-up routine when the adaptor unit 3 is initially connected to the games console 7 via the connector 59. As those skilled in the art will appreciate, the transmission of

5   the video player 65 in compiled format over the connector 59 is secure since the compiled version of the video player module 65 will not run on the personal computer 9. This is because, the personal computer 9 and the games console 7 operate with different processors and

10   micro-instructions. Further, for added security, a new version of the video player module 65 can be downloaded into the games console memory 63 at regular intervals, in order to change the secret 73 embedded therein. In this case, a corresponding change of the AES encryption

15   and decryption keys 53 and 54 will also be required to work with the new secret 73.

In the event that the user wishes to play a game, the video data for the game is generated by a game controller

20   module 95 from data received from a game CD-ROM 97 via a game interface unit 99. The controller module 95 also generates the video data for the game in dependence upon user inputs from a game pad 101 and a game controller interface 103. In this embodiment, the controller module

25   95 allows a user to save a current position in a game

being played by storing the necessary game history data in the hard disc 39 of the adaptor unit 3. In particular, if the user presses a key on the game pad 101 in order to save the game at the current position, the game controller 95 transmits a request together with the appropriate game history data to the games console communications controller 71 in the adaptor unit 3 via the adaptor unit interface 61, the connector 59 and the games console interface 57. Upon receipt of the game history data, the games console communications controller 71 stores the history data in the hard disc 39. Subsequently, if the user inputs via the game pad 101 that they wish to resume playing the game, the game controller module 95 transmits another request to the games console communications controller 71 for the appropriate game history data. Again, this request is transmitted via the adaptor unit interface 61, the connector 59 and the games console interface 57. In response, the games console communications controller 71 retrieves the requested game history data from the hard disc 39 and transmits it back to the controller 95 via the games console interface 57, the connector 59 and the adaptor unit interface 61. The controller 95 then resumes playing the game using the stored history data and the game data from the CD-ROM 97.

Additionally, in this embodiment, the user can request to download new games from a remote game server 21 connected to the data network 19. In particular, in this embodiment, the user can gain access to the remote game server 21 using the web browser module 89. In particular, one of the options on one of the menu pages generated by the web browser 89 includes the option to access the web page for the game server 21. Whilst accessing the game server 21, the user can play games online and/or download games via the data network 19 and the ADSL modem 33 and store the game in the hard disc 39. The user can then access the games stored in the hard disc 39, again through appropriate navigation through the menu pages generated and controlled by the web browser 89. Once a game has been selected for retrieval from the hard disc 39, the games console communications controller 71 reads the game from the hard disc 39 and transmits it via the games console interface 57, the connector 59 and the adaptor unit interface 61 to the game controller 95 which then controls the playing of the game.

Modifications and Alternatives

In the above embodiment, the video player and the web browser were downloaded in compiled format into the games console and the compiled video player included a secret

that was used to decrypt the video data received from the adaptor unit. Because the secret is only available within the games console, the adaptor unit can act as the hub of an ethernet LAN network within the user station. In this case, the connector connecting the adaptor unit to the games console would form part of the LAN connections, with other computer devices, such as the personal computer being coupled to the LAN via this connector.

In the above embodiment, both a video player and a web browser were downloaded into the games console from the adaptor unit. The use of a web browser in addition to the video player allowed the user to interact and gain access to services provided by remote servers coupled to the data network. However, as those skilled in the art will appreciate, the use of such a web browser is not essential. The menu pages may be pre-stored within the games console or the adaptor unit and accessed by the user pressing an appropriate key on the game pad or on the remote control. In such an embodiment, only the video player would be downloaded from the adaptor unit into the games console.

In the above embodiment, the user navigated through the

menu pages using the remote control. In an alternative embodiment, the user may use the game pad in addition to or instead of the remote control to navigate through the menu pages.

5

In the above embodiment, the adaptor unit and the games console were connected together by a connector. This connector may be any appropriate connector, such as one or more wires or a wireless interface. The adaptor unit

10 may also be arranged in the form of a cartridge which can be inserted into an appropriate slot of the games console.

In the above embodiment, the adaptor unit included both

15 a television tuner and an ADSL modem. As those skilled in the art will appreciate, in an alternative embodiment one of these video receivers may be omitted.

In the above embodiment, a remote control interface was

20 provided in the adaptor unit. Alternatively, the remote control interface may be omitted or provided within the games console.

In the above embodiment, the video player and the web

25 browser were downloaded in compiled format from the

adaptor unit. In an alternative embodiment, the video player and/or the web browser may be provided in compiled format on a CD-ROM and read into the games console via the game interface. However, such an embodiment is not

5 preferred because of the ease with which CD-ROMs can be copied.

In the above embodiment, the received video data was initially decrypted within the adaptor unit and then re-

10 encrypted using a different encryption technique. This is because the video data must be encrypted using a user-specific encryption code so that it can only be decrypted by a video player having the above-described secret. However, as those skilled in the art will appreciate,

15 this is not essential. The encrypted video data received by the adaptor unit may be passed directly to the games console. In this case, the decryption key used to decrypt the received video data would preferably be processed by the adaptor unit with the user's secret to

20 generate an appropriate intermediate decryption key which can be passed from the adaptor unit to the games console over the connector. The games console can then use the user's secret to transform the intermediate decryption key into the decryption key necessary to decrypt the

25 received video data. Again, since the games console only

knows the user's secret, other devices (such as the personal computer) coupled to the connector cannot decrypt the received video data.

In the above embodiment, the decoded video data and the games video data were output to a television interface. If the television is a digital television, then this television interface may comprise a frame buffer. However, if the television is an analogue television, then the television interface will include an appropriate analogue video signal generator which generates an appropriate video signal from the digital video data.

In the above embodiment, a secret was embedded within the video player so that encrypted video data could be transmitted over an unsecured communications link which connected the adaptor unit to the games console. As those skilled in the art will appreciate, a similar secret may be embedded within the web browser in order to keep secret any communications transmitted between the adaptor unit and the browser in the games console. This may be used, for example, in order to provide a secure communications channel between the games console and the remote game server. This allows the game server to be able to encrypt the games which are downloaded to the

games console via the adaptor unit so that they cannot be accessed by a device also connected to the connection between the adaptor unit and the games console. Such a secure communication link between the games console and

5   the remote game server can also be used, for example, to control micropayments for playing a downloaded game. For example, the secure communication link may be used by the user to pay for a game before it is downloaded. Alternatively, each time the game is played the browser

10   may signal this to the adaptor unit which can either increment a charge based on how long the game has been played or send a message to the remote game server where the appropriate charge is made.

15   In addition to providing the games console with an interface to remote game servers, the adaptor unit also provides the games console with an interface to other users via the data network to which the adaptor unit is attached. The user of the games console can therefore

20   take part in network gaming in which users of different games consoles can simultaneously play a game with multiple users distributed at different physical locations on the data network.

25   In the main embodiment described above, the encryption

and decryption keys for the video data were stored on a smart-card which could be inserted into the adaptor unit. As those skilled in the art will appreciate, it is not essential to store these keys on a smart-card. A

5 separate "smart processor" may be built onto the mother-board of the adaptor unit. However, the use of a smart-card or the like is preferred because it is easy to replace the smart-card if it is believed that the security of the encryption and/or decryption keys has

10 been compromised.

CLAIMS:

1. A games system comprising a games console and an adaptor unit,

5   wherein the games console comprises:

(i) a console housing;

(ii) a game interface within said console housing for receiving a game product;

(iii) a display interface within said console

10   housing for interfacing said games console to a display;

(iv) a user interface within said console housing for receiving user input;

(v) a game controller within said console housing for receiving game data from said game interface and said

15   user input from said user interface and for generating therefrom game video data for output to said display interface;

(vi) an adaptor interface within said console housing for coupling the games console with said adaptor

20   unit; and

(vii) a video player within said housing for receiving encoded video data from said adaptor unit via said adaptor interface and for outputting decoded video data to said display interface;

25   wherein said adaptor unit comprises:

(i) an adaptor housing;

(ii) a video data receiver within said adaptor housing for receiving encoded video data from a remote video provider;

5   (iii) a games console interface within said adaptor housing for interfacing said adaptor unit to said adaptor interface of said games console; and

(iv) a communications controller within said adaptor housing for outputting encoded video data to said video

10   player of said games console via said console interface and said adaptor interface.

2.   A system according to claim 1, wherein the adaptor unit further comprises encryption means for encrypting

15   the video data to be output to said video player via said console interface and wherein said video player includes decryption means for decrypting the video data.

3.   A system according to claim 2, wherein said video

20   player includes embedded data for decrypting the encrypted video data.

4.   A system according to claim 3, wherein said adaptor unit further comprises a secure processor for storing an

25   encryption key for use by said encryption means for

encrypting said video data.

5.   A system according to claim 4, wherein an intermediate decryption key is provided in said secure processor, wherein said communications controller is operable to pass said intermediate decryption key to said video player via said console interface and said adaptor interface and wherein said decryption means of said video player is operable to decrypt said video data using said embedded data and said intermediate decryption key.

6.   A system according to claim 4 or 5, wherein said secure processor is formed on a smart-card which is retractable from a smart-card reader mounted within said adaptor housing.

7.   A system according to any of claims 4 to 6, wherein said games console further comprises a memory for storing software modules and a processor unit for executing said software modules and wherein said video player is formed as a software module within said memory.

8.   A system according to claim 7, wherein said adaptor unit comprises a data store for storing software code defining a video player and a compiler for compiling the

video player code to generate a compiled video player for execution by said processing unit within said console housing, and wherein said communications controller is operable to output said compiled video player to said

5   memory within said console housing via said console interface and said adaptor interface.

9.   A system according to claim 8, wherein said compiler is operable to embed securely said embedded data within

10   said video player.

10.   A system according to any preceding claim, wherein said adaptor unit further comprises a large capacity storage means for storing video data or game data.

15

11.   A system according to claim 10, wherein said games console further comprises a controller responsive to a user input from said user interface and operable to transmit game history data to said communications

20   controller of said adaptor unit via said console interface and said adaptor interface and wherein said communications controller is operable to store said game history data in said large capacity storage means.

25   12.   A system according to claim 11, wherein said

controller is operable, in response to a user input via said user interface, to transmit a request to retrieve game history data to said communications controller of said adaptor unit via said adaptor interface and said

5   console interface and wherein said communications controller is operable to retrieve the requested game history data from said large capacity storage means and is operable to transmit the retrieved game history data to said controller via said console interface and said

10   adaptor interface.

13. A system according to any preceding claim, wherein said adaptor unit further comprises a modem within said adaptor housing for connecting the adaptor unit to a data

15   network.

14. A system according to claim 13, wherein said games console further comprises a web browser within said console housing for receiving menu pages from a remote

20   server via said modem in said adaptor unit, said console interface and said adaptor interface and for generating menu screens for output to said display interface.

15. A system according to claim 14, wherein said menu

25   page includes a video window for displaying a video

sequence, and wherein said web browser is operable to request the appropriate video data for said video window from said video player and is operable to combine the received video data with said menu screen.

16. A system according to claim 14 or 15, wherein said games console comprises a memory for storing software modules and a processor unit for executing said software modules and wherein said web browser is formed as a software module within said memory.

17. A system according to claim 16, wherein said adaptor unit comprises a data store for storing software code defining a web browser and a compiler for compiling the web browser code to generate a compiled web browser for execution by said processing unit within said console housing, and wherein said communications controller is operable to output said compiled web browser to said memory within said console housing via said console interface and said adaptor unit.

18. A system according to claim 17, wherein said compiler is operable to embed securely embedded data within said compiled web browser.

19.   A system according to claim 18, wherein said adaptor unit comprises encryption means for encrypting data to be transmitted to said web browser via said console interface and wherein said web browser includes decryption means for decrypting the received data.

20.   A system according to claim 19, wherein said web browser uses said embedded data to decrypt the received data.

21.   A system according to claim 20, wherein said adaptor unit is operable to download a software game from a remote server coupled to said data network and to encrypt it for secure transmission to said web browser in said games console via said games console interface and wherein said web browser is operable to decrypt the encrypted game software for playout by said games console.

22.   A system according to claim 21, wherein said web browser includes encryption means for encrypting data to be transmitted to said data network via said adaptor unit.

23.   A system according to claim 22, wherein said web

browser is operable to transmit payment data for said games software to said data network via said adaptor unit.

24. A system according to claim 23, wherein said web browser is operable to transmit payment data each time the downloaded game software is played.

25. A system according to claim 23, wherein said web browser is operable to transmit payment data to said data network via said adaptor unit to pay for the use of the game for a predetermined period of time, and wherein said web browser is operable to monitor the time that the user has the game software or plays the game software.

26. A system according to any of claims 13 to 25, wherein said games console is operable to transmit and to receive game data to and from said data network via said modem and said adaptor unit to provide network gaming to a user thereof.

27. A system according to any preceding claim, wherein said adaptor unit further comprises a remote control interface within said adaptor housing for receiving signals from a remote control unit for controlling the

reception of video data by said video data receiver.

28. An adaptor unit for use with a games console, the adaptor unit comprising:

5   an adaptor housing;

a video data receiver within the adaptor housing for receiving encoded video data from a remote video provider;

a games console interface within said adaptor

10   housing for interfacing said adaptor unit to said games console; and

a communications controller within said adaptor housing for outputting encoded video data to said games console via said console interface.

15

29. An adaptor unit according to claim 28, further comprising encryption means for encrypting the video data to be output to said games console via said console interface.

20

30. An adaptor unit according to claim 29, further comprising a secure processor within said adaptor housing for storing an encryption key for use by said encryption means for encrypting said video data.

25

31. An adaptor unit according to claim 30, wherein an intermediate decryption key is provided in said secure processor and wherein said communications controller is operable to pass said intermediate decryption key to said
5   games console via said console interface.

32. An adaptor unit according to claim 30 or 31, wherein said secure processor is retractable from said adaptor housing and is formed on a smart-card and wherein said
10   adaptor housing includes a smart-card reader for reading the encryption key from said smart-card processor.

33. An adaptor unit according to any of claims 30 to 32, wherein said adaptor unit comprises a data store for
15   storing software code defining a video player and a compiler for compiling the video player code to generate a compiled video player for execution by a processor within said games console, and wherein said communications controller is operable to output said
20   compiled video player to said games console via said console interface.

34. An adaptor unit according to claim 33, wherein said compiler is operable to securely embed data for use by
25   said video player in decrypting encrypted video data

received from said adaptor unit.

35.   An adaptor unit according to any of claims 28 to 34,
further comprising a large capacity storage means for
5   storing video data or game data.

36.   An adaptor unit according to claim 35, wherein said
communications controller is operable to receive game
history data from said games console via said console
10   interface and is operable to store the received game
history data in said large capacity storage means.

37.   An adaptor unit according to claim 36, wherein said
communications controller is operable to receive a
15   request from said games console to retrieve game history
data from said large capacity storage means and wherein
said communications controller is operable to retrieve
the requested game history data from said large capacity
storage means and to output the retrieved game history
20   data to said games console via said console interface.

38.   An adaptor unit according to any of claims 28 to 37,
further comprising a modem within said adaptor housing
for connecting the adaptor unit to a data network.

25

39. An adaptor unit according to claim 38, wherein said adaptor unit comprises a data store for storing software code defining a web browser and a compiler for compiling the web browser code to generate a compiled web browser

5   for execution by a processor within said games console, and wherein said communications controller is operable to output said compiled web browser to said games console via said console interface.

10   40. An adaptor unit according to claim 39, wherein said compiler is operable to securely embed data for use by said web browser in decrypting encrypted data received from said adaptor unit via said modem.

15   41. An adaptor unit according to claim 40, wherein said adaptor unit comprises encryption means for encrypting data to be transmitted to said web browser via said console interface and wherein said web browser includes decryption means for decrypting the received data.

20

42. An adaptor unit according to claim 41, wherein said adaptor unit is operable to download a software game from a remote server coupled to said data network via said modem and to encrypt it for secure transmission to said

25   web browser in said games console via said games console

interface.

43. An adaptor unit according to claim 42, wherein said communications controller is operable to receive payment data for said games software from said games console and is operable to transmit said payment data to said data network via said modem.

44. An adaptor unit according to claim 43, wherein said adaptor unit is operable to receive payment data each time the downloaded game software is played by said games console.

45. An adaptor unit according to claim 43, wherein said adaptor unit is operable to receive payment data from said games console for use of the downloaded game software for a predetermined period of time.

46. An adaptor unit according to any of claims 38 to 45, wherein said adaptor unit is operable to receive game data from said games console and to transmit the received game data to said data network and is operable to receive game data from said data network and to transmit the game data received from the data network to said games console, to provide network gaming to a user of the games

console.

47. An adaptor unit according to any of claims 28 to 46, further comprising a remote control interface within said adaptor housing for receiving signals from a remote control unit, for controlling the reception of video data by said video data receiver.

48. A games console for use in the system according to any of claims 1 to 27, the games console comprising:

a console housing;

a game interface within said console housing for receiving a game product;

a display interface within said console housing for interfacing said games console to a display;

a user interface within said console housing for receiving user input;

a game controller within said console housing for receiving game data from said game interface and said user input from said user interface and for generating therefrom game video data for output to said display interface;

an adaptor interface within said console housing for coupling the games console with said adaptor unit; and

a video player within said housing for receiving

encoded video data from said adaptor unit via said adaptor interface and for outputting decoded video data to said display interface.

5   49. A games console according to claim 48, wherein the adaptor encrypts the video data to be output to said video player and wherein said video player includes decryption means for decrypting the video data.

10   50. A games console according to claim 49, wherein said video player includes embedded data for decrypting the encrypted video data.

51. A games console according to any of claims 48 to 50,
15   wherein said games console comprises a memory for storing software modules and a processor unit for executing said software modules and wherein said video player is formed as a software module within said memory.

20   52. A games console according to any of claims 48 to 51, wherein said games console further comprises a controller responsive to a user input from said user interface and operable to transmit game history data to said adaptor unit.

25

53. A games console according to claim 52, wherein said controller is operable, in response to a user input via said user interface, to transmit a request to retrieve game history data from said adaptor unit.

5

54. A games console according to any of claims 48 to 53, wherein said games console further comprises a web browser within said console housing for receiving menu pages from a remote server via a modem in said adaptor

10   unit, and for generating menu screens for output to said display interface.

55. A games console according to claim 54, wherein said menu page includes a video window for displaying a video

15   sequence, and wherein said web browser is operable to request the appropriate video data for said video window from said video player and is operable to combine the received video data with said menu screen.

20   56. A games console according to claim 54 or 55, wherein said games console comprises a memory for storing software modules and a processor unit for executing said software modules and wherein said web browser is formed as a software module within said memory.

25

57. A games console according to claim 56, wherein said web browser includes embedded data for use in decrypting data received from said adaptor unit.

58. A games console according to claim 57, wherein said adaptor unit downloads a software game from a remote server coupled to said data network and encrypts it for secure transmission to said web browser in said games console and wherein said web browser is operable to decrypt the encrypted game software for playout by said games console.

59. A games console according to claim 58, wherein said web browser includes encryption means for encrypting data to be transmitted to said data network via said adaptor unit.

60. A games console according to claim 59, wherein said web browser is operable to transmit payment data for said games software to said data network via said adaptor unit.

61. A games console according to claim 60, wherein said web browser is operable to transmit payment data each time the downloaded game software is played.

62. A games console according to claim 60, wherein said web browser is operable to transmit payment data to said data network via said adaptor unit to pay for the use of the game for a predetermined period of time, and wherein said web browser is operable to monitor the time that the user has the game software or plays the game software.

63. A games console according to any of claims 54 to 62, wherein said games console is operable to transmit and to receive game data to and from said data network via said modem and said adaptor unit to provide network gaming to a user thereof.

64. A method of providing video data for display, the method comprising the steps of:
        interfacing an adaptor unit with a games console;
        receiving at said adaptor unit encoded video data from a remote video provider;
        outputting encoded video data from said adaptor unit to said games console through said interface;
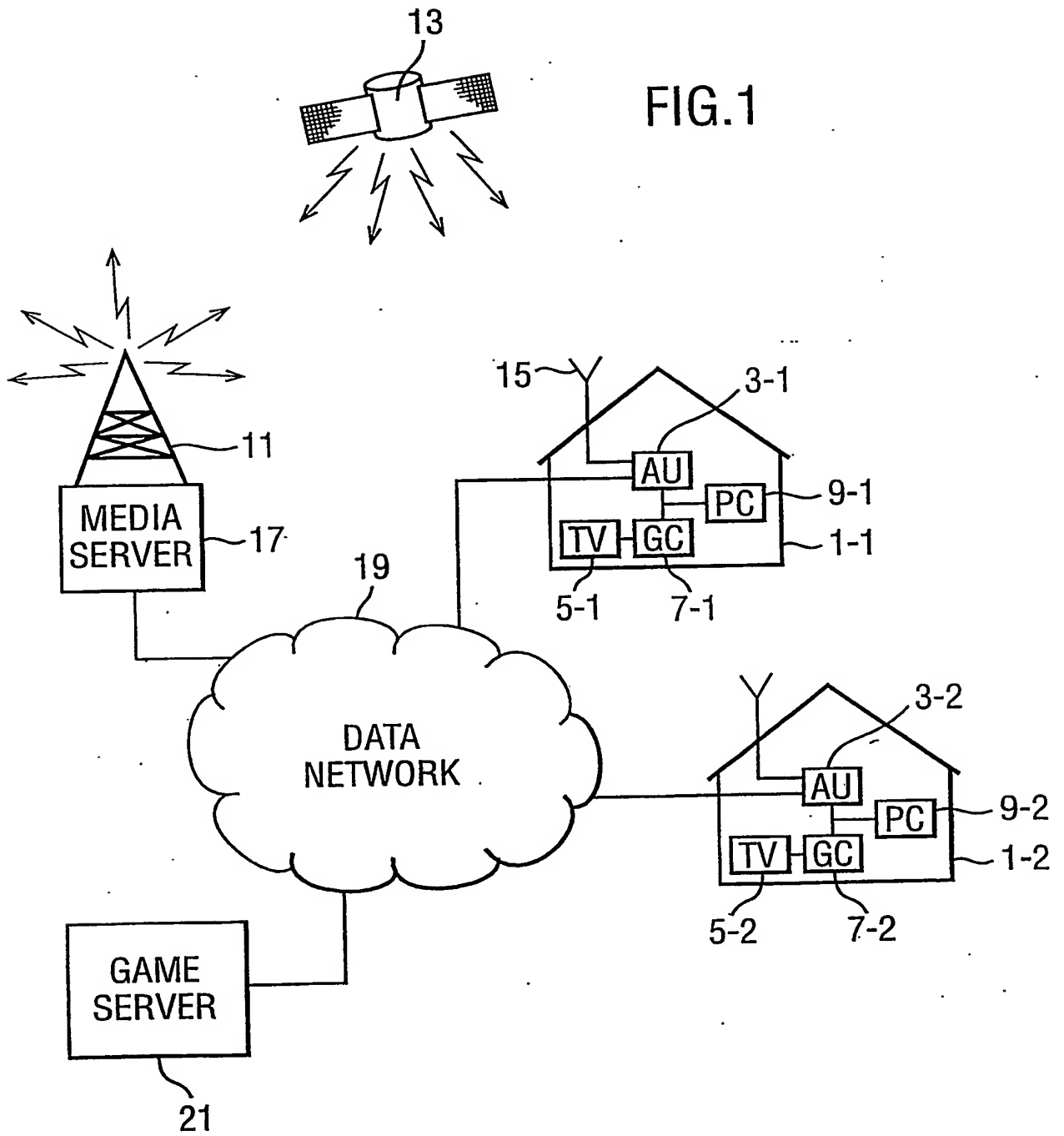   decoding in said games console said encoded video data to generate decoded video data; and
        outputting the decoded video data for display.

38

ABSTRACT

GAMES CONSOLE ADAPTOR UNIT

5   An adaptor is provided for a games console which allows users to gain access to interactive television services through the games console. The adaptor includes a television tuner for receiving broadcast television channels, a communications controller which controls

10   communications between the adaptor and the games console and an interface for interfacing the adaptor to the games console. In a preferred embodiment, the adaptor also includes a hard disc for storing video data and for storing game history data. The adaptor may also include

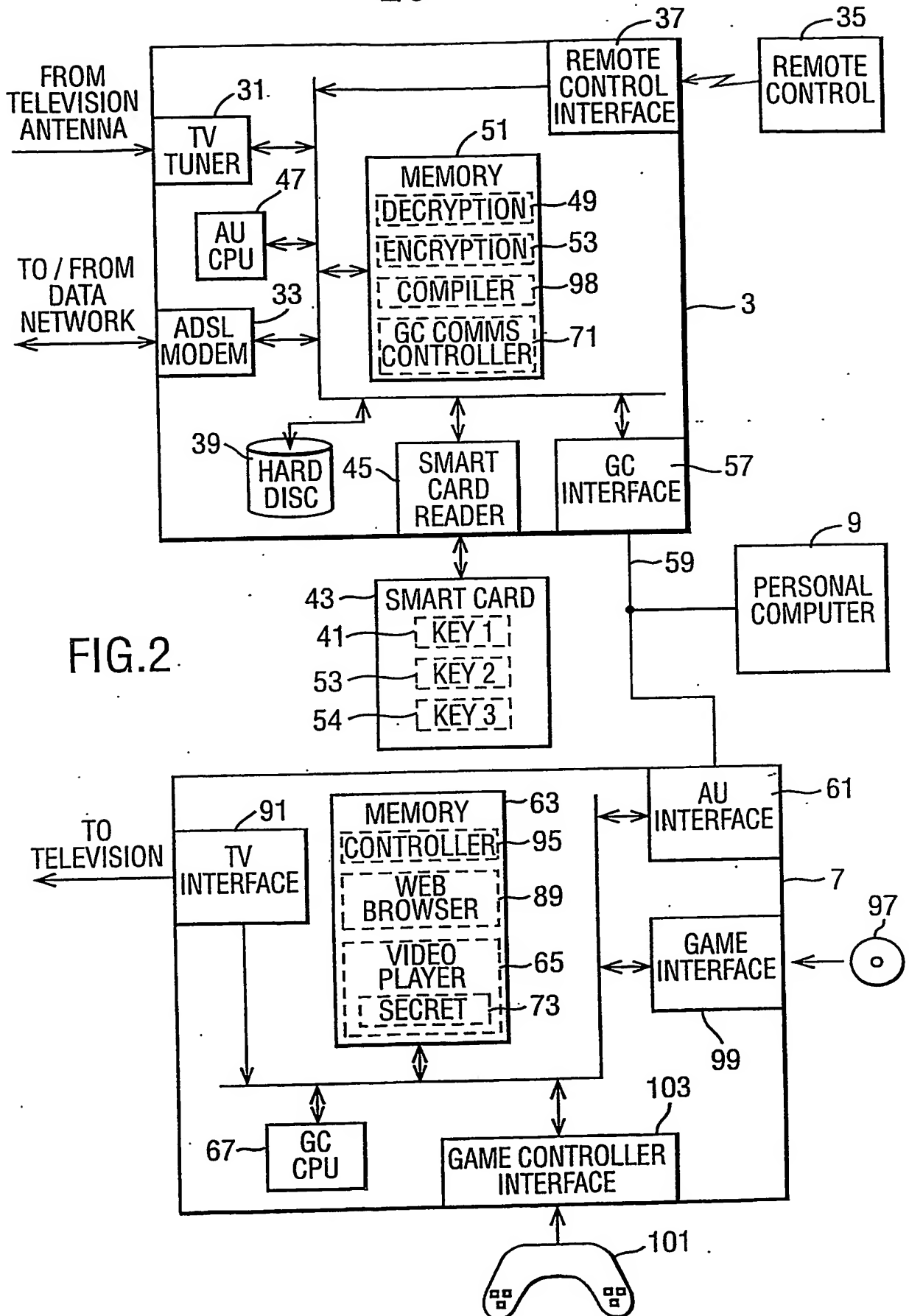15   a modem via which the user can gain access to remote servers connected to a data network.

FIG.1
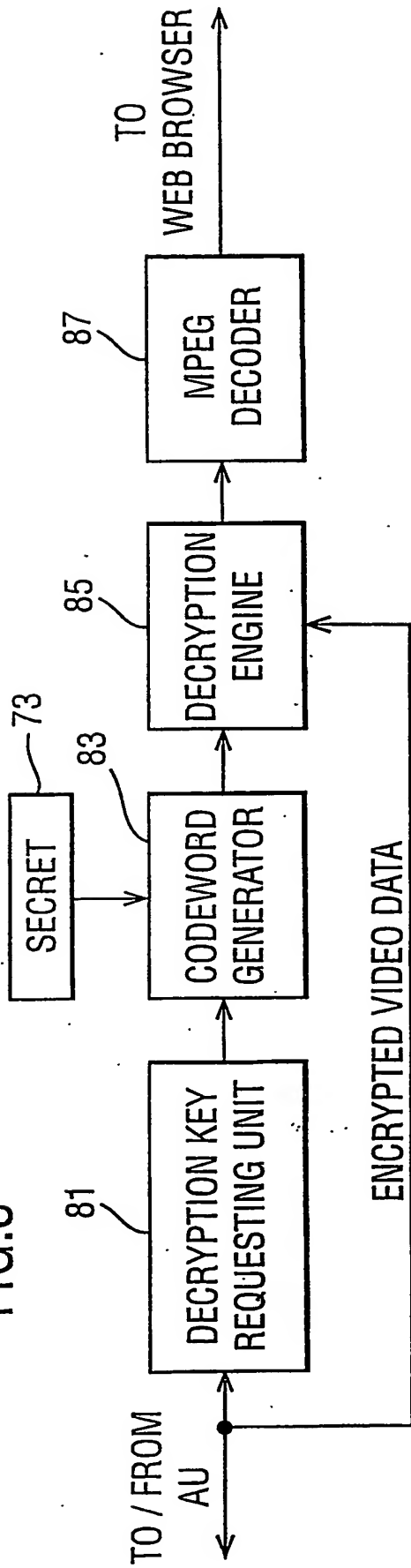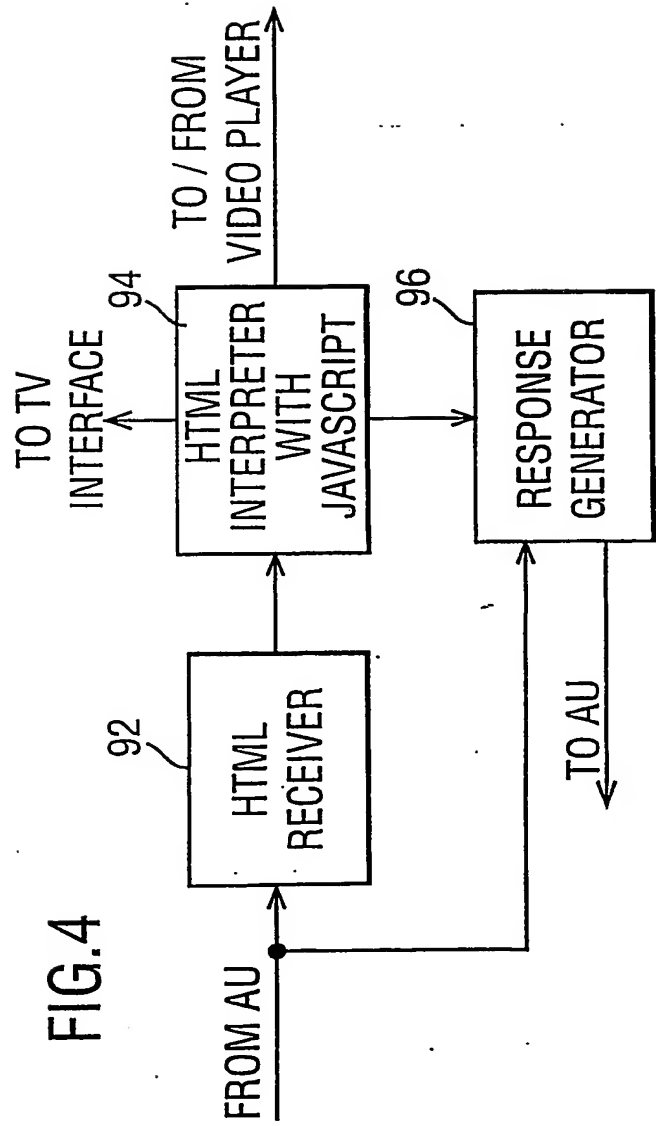
FROM
TELEVISION
ANTENNA

TO / FROM
DATA
NETWORK

31 TV TUNER

47 AU CPU

33 ADSL MODEM

37 REMOTE CONTROL INTERFACE

35 REMOTE CONTROL

51 MEMORY
DECRYPTION 49
ENCRYPTION 53
COMPILER 98
GC COMMS CONTROLLER 71

3

39 HARD DISC

45 SMART CARD READER

57 GC INTERFACE

59

9 PERSONAL COMPUTER

FIG.2

43 SMART CARD
41 KEY 1
53 KEY 2
54 KEY 3

TO TELEVISION

91 TV INTERFACE

63 MEMORY
95 CONTROLLER
89 WEB BROWSER
65 VIDEO PLAYER
73 SECRET

61 AU INTERFACE

7

97

99 GAME INTERFACE

67 GC CPU

103 GAME CONTROLLER INTERFACE

101

FIG.3

TO / FROM
AU

81 — DECRYPTION KEY
REQUESTING UNIT

73 — SECRET

83 — CODEWORD
GENERATOR

85 — DECRYPTION
ENGINE

87 — MPEG
DECODER

TO
WEB BROWSER

ENCRYPTED VIDEO DATA

FIG.4

FROM AU

92 — HTML
RECEIVER

94 — HTML
INTERPRETER
WITH
JAVASCRIPT

TO TV
INTERFACE

TO / FROM
VIDEO PLAYER

96 — RESPONSE
GENERATOR

TO AU